

***Natatolana nukumbutho*, a new species
(Crustacea: Isopoda: Cirolanidae) from
deep water off Suva, Fiji**

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Abstract.—*Natatolana nukumbutho*, a new species, is described from specimens taken by baited trap at a depth of 470 m, off Suva, Viti Livu, Fiji. The species is characterized by having acute posterolateral margins on pleonites 3 and 4, entire sutures on all coxae, the appendix masculina slender and shorter than the endopod, and by the spine details of the pleotelson and uropods.

The marine isopod fauna of Fiji is poorly known, with only a few records in the recent literature (e.g., Bruce 1984, 1995a; Bruce & Harrison-Nelson 1988, Kensley 1979). This present contribution adds one more species to the few already known from the area.

Specimens are deposited at the Zoological Museum, University of Copenhagen (ZMUC), and one pair of paratypes at the Australian Museum, Sydney, Australia. Abbreviations: BL—body length; CPS—circumplumose setae; PMS—plumose marginal setae; PS—plumose setae.

Taxonomy

Family Cirolanidae Dana

Genus *Natatolana* Bruce, 1981

Remarks.—The cirolanid isopod genus *Natatolana* is one of the largest of the family with over 60 named species, and numerous undescribed species. It has been recorded from all the world oceans, from shallow water, rarely intertidal, to depths in excess of 2000 meters (Bruce 1986, Brusca et al. 1995). There are, however, no records of the genus from the central South Pacific, and very little collected material exists from this region. The description of the new species below establishes the presence of the genus in the central South Pacific Ocean.

Natatolana nukumbutho, new species
Figs. 1–4

Material examined.—Holotype: ♂ (12.3 mm), off Lauthala Bay, Suva, Fiji, 18°13'S, 178°29'E, 23 Jan 1981, 470 m, in baited trap, coll. Institute of Marine Resources, University of the South Pacific (ZMUC CRU-580).

Paratypes: 2 ♂♂ (11.4, 13.2 [dissected] mm), 11 ♀ (non-ovig 12.2, 13.8, 14.0, 14.0, 14.2, 14.5, 15.5, 16.0, 16.5, 16.8, 17.0 mm), same data as holotype (ZMUC CRU-581, 582; 1 ♂, 1 ♀ AM P43423).

Description.—Male: Body about 2.8 times as long as greatest width; maximum width at pereonites 4–6. Cephalon with submarginal anterior suture, entire anterior and dorsal interocular sutures present, dorsal suture medially weak. Eyes large, rectangular, 1.8 times as long as wide; ocelli distinct, 12–13 horizontally, 8–9 vertically. Pereonite 1 with 2 fine lateral sutures, dorsal suture not extending to posterior margin of pereonite; coxae all with entire carina, posterolateral angles of coxae 6 and 7 acute. Pleon 14.3% BL, pleonites 2–4 each with lateral longitudinal suture; pleonite 1 lateral margins not produced, those of 3 and 4 produced and acute, dorsal and ventral margins of pleonite 4 both convex. Pleotelson slightly longer than pleon, about 16.7% BL, 80%

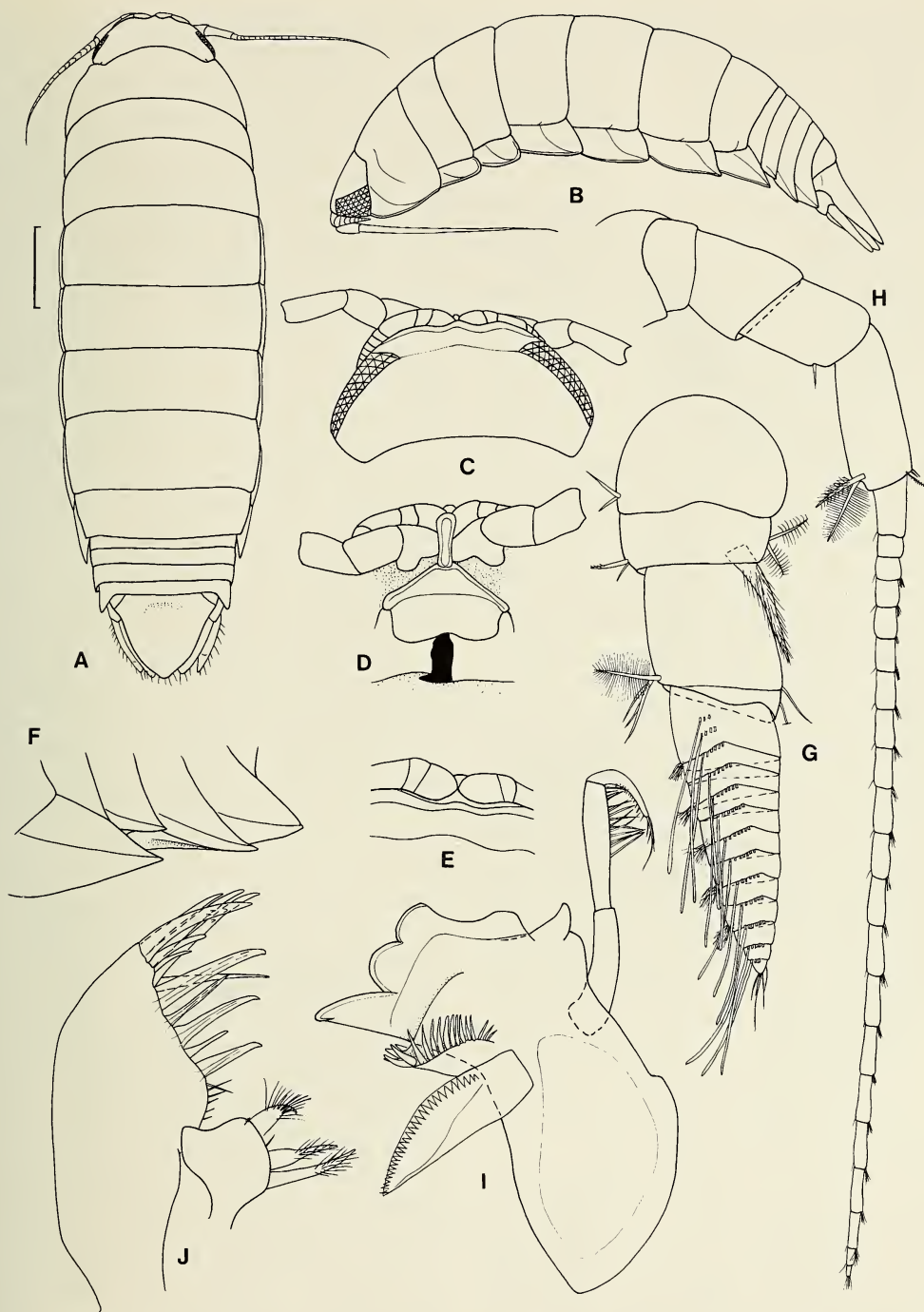


Fig. 1. *Natatolana nukumbutho*, new species. A–E holotype, remainder ♂ paratype 13.2 mm. A, dorsal view; B, lateral view; C, cephalon, dorsal view; D, frons; E, detail of anterior cephalic sutures; F, pleonites, lateral view; G, antennule; H, antenna; I, left mandible; J, maxillule. Scale 2.0 mm.

as long as greatest width, shield shaped, with indistinct narrow and shallow anterodorsal depression which lacks a median notch; posterior margin 12 spines set among PMS, with single seta anterior to anterior-most spine; apex not produced.

Antennule peduncle article 2 about half (0.57) as long as 1, article 3 longest, articles 1 and 2 combined 1.3 times as long as article 3; article 2 with prominent stout broad based pappose seta at ventrodistal margin, nearly as long as and extending near to distal margin of article 3; article 3 with 1 plumose sensory and 3 simple setae at anterodistal angle; flagellum slightly shorter (0.9) than peduncle, with 12 articles, extending to posterior margin of eye, proximal article longest. Antenna peduncle articles 1 and 2 short, their combined length slightly less (0.88) than article 3, article 5 1.6 times as long as article 4, posterodistal angle with 2 densely plumose sensory setae; flagellum with 21 articles, extending to pereonite 4.

Frontal lamina 3.4 times as long as basal width, ventrally flat, lateral margins weakly concave, anterior margin rounded, slightly wider than posterior margin. Mandible spine row with 15 spines; molar process with lateral fold, with about 28 spines along anterior margin. Maxillule as for others of the genus. Maxilla lateral lobe with 5 setae, middle lobe with about 17 in 2 ranks, 10 ventral and 7 dorsal, medial lobe with about 13 CP and distally 3 simple spines. Maxilliped palp articles 2–5 with both margins setose, those of lateral margins being longer than those of medial margins; endite with 2 coupling hooks and 6 long CPS.

Pereopods 1–3 without conspicuously elongate spines on posterior margins. Pereopod 1 basis with cluster of about 8 long slender simple setae at posterodistal angle, anterior margin 10 widely spaced long slender simple setae; ischium anterodistal margin with about 15 long slender simple setae, distomedial lateral margin with row of 7 simple setae, posterior margin with 9 stiff simple setae; merus anterodistal lobe with

prominent apical spine and lateral row of about 14 long setae medially with about 5 setae, posterior margin sinuate, with 10 spines (2 of which are medial); carpus with 1 small and 1 large acute spines at postero-distal angle; propodus about 3 times as long as wide, with 4 acute spines on palm becoming progressively larger distally, prominent unornamented blunt spine opposing dactylus, anterodistal angle with cluster of 3 stiff setae, further medial cluster of setae at posterodistal margin; dactylus slender, about 0.75 as long as propodus and about 5.2 times as long as basal width. Pereopod 2 with more numerous, larger and more robust spines than pereopod 1 except for propodal palm which has only 2 small acute spines; ischium anterodistal margin without spines, posterodistal margin with 3 acute spines; merus anterodistal margin with 7 stiff setae and 6 stout spines, distally with further 3 long slender simple setae; carpus posterodistal margin with 2 long acute and 4 short acute spines. Pereopods 5–7 similar in morphology, pereopod 4 intermediate between 3 and 5. Pereopod 7 basis broad, about half as wide as long, anterior margin proximal three-quarters straight, with continuous PS, posterior margin nearly straight, without setae, medial carina with PS along entire length, distal angle with about 20 long PS and laterally a further 6 shorter PS; ischium posterior margin with 5 evenly spaced single acute spines and about 16 long PS, spines at distal angle, anterodistal angle with 2 larger acute and 4 small biserrate spines, mediiodistal margin with 2 acute spines; merus posterior margin with 2 short acute spines and 5 slender finely serrate setae, anterodistal angle with 2 spines and 2 setae, posterodistal angle with cluster of about 9 spines and 5 slender finely serrate setae; carpus posterior margin with 2 short acute spines and a large cluster of about 4 long and short spines and 3 finely serrate setae at distal angle, anterodistal angle with cluster of about 10 long acute spines several of which are finely biserrate; propodus poste-

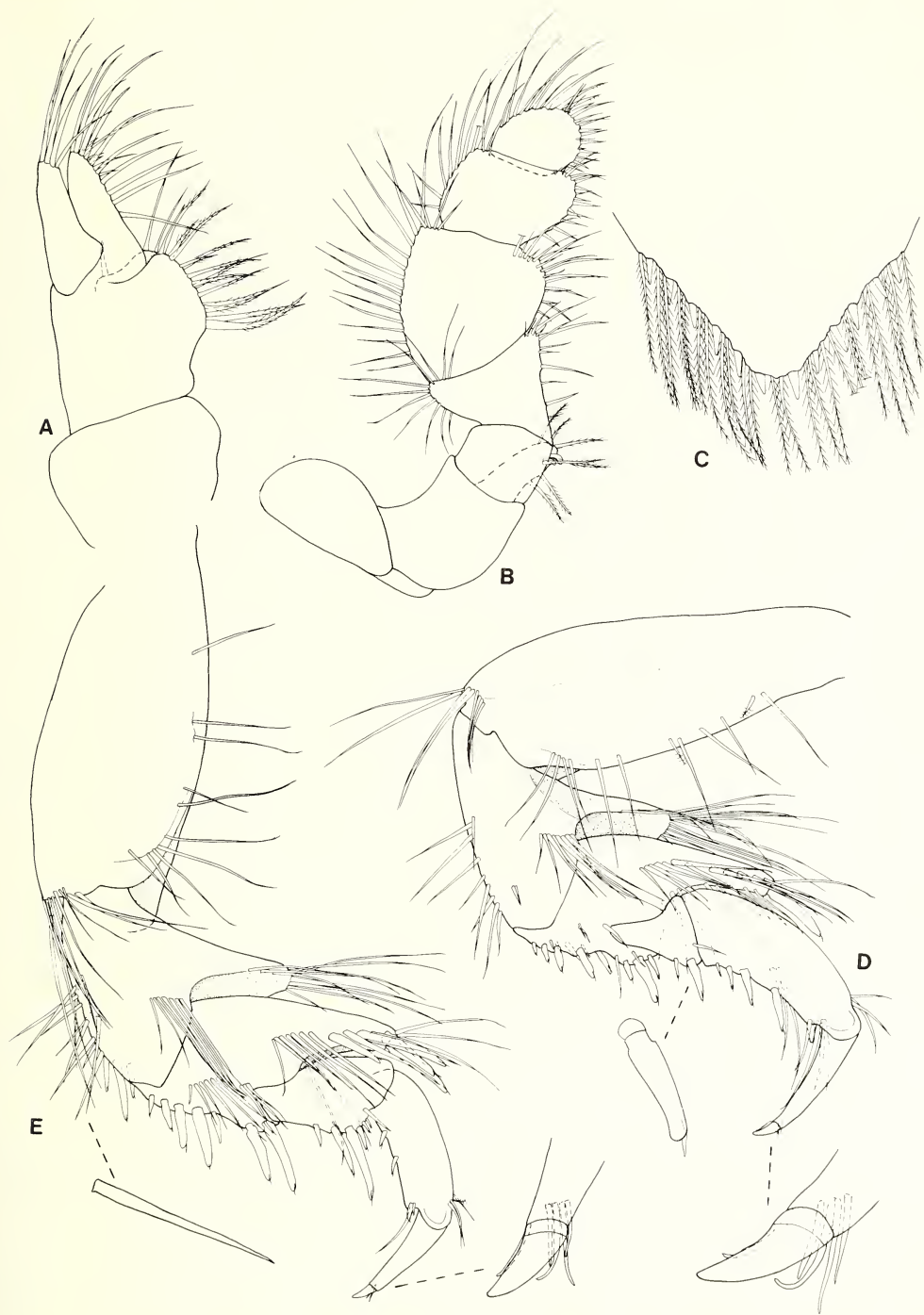


Fig. 2. *Natatolana nukumbutho*, new species. Figures of ♂ paratype 13.2 mm, except C, holotype. A, maxilla; B, maxilliped; C, pleotelson posterior margin; D, pereopod 1; E, pereopod 2.



Fig. 3. *Natatolana nukumbutho*, new species. All figures of ♂ paratype 13.2 mm. A, pereopod 7; B, uropod.

rior margin with 1 and 2 short acute evenly spaced spines on posterior margin, with 3 spines opposing dactylus.

Penial processes absent; position of penial openings and vasa deferenta not discernable.

Pleopod 1 exopod with about 77 PMS, lateral and medial margins evenly rounded; slender spine present at sub-basal proximolateral angle; endopod with about 30 PMS, 0.64 as wide as exopod, medial margin straight; peduncle with 5 coupling hooks.

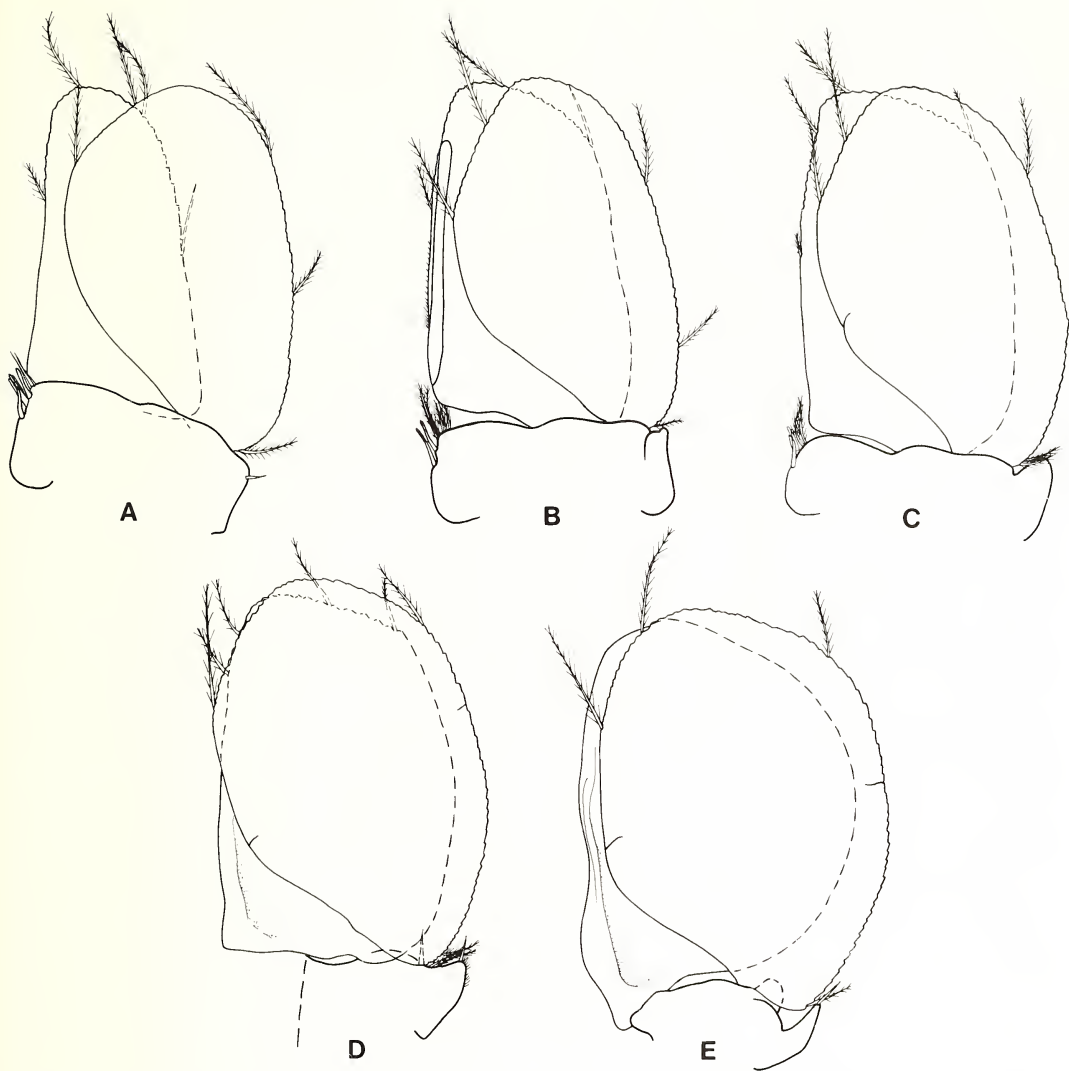


Fig. 4. *Natatolana nukumbutho*, new species. All figures of ♂ paratype 13.2 mm. A-E, pleopods 1-5 respectively.

Pleopod 2 exopod and endopod with about 79 and 29 PMS respectively, peduncle with 4 coupling hooks; appendix masculina straight, slender, about 15 times as long as basal width, 0.7 times as long as endopod, not reaching distal margin of endopod, apex narrowly rounded. Pleopods 3 and 4 similar to each other, exopod suture only laterally distinct. Pleopod 3 exopod and endopod with about 65 and 26 PMS respectively, peduncle with 4 coupling hooks. Pleopod 4

exopod and endopod with about 69 and 25 PMS respectively. Pleopod 5 exopod and endopod with about 67 and 0 PMS respectively, exopod suture fine, entire, peduncle without coupling hooks. Uropod exopod 3.7 times as long as greatest width, about 0.9 length of endopod; exopod lateral margin with 7 spines and 27 PMS, medial margin with 4 spines and continuous long PMS; endopod about 2.5 times as long as greatest width, lateral margin weakly convex, with

4 spines and about 14 PMS on distal two thirds of margin; medial margin posterior two thirds nearly straight, with 5 spines becoming progressively shorter distally except for apical spine, and continuous PMS; peduncle distolateral angle with 1 spine, ventrolateral margin with 2 spines.

Female: Similar to the male except for the primary sexual characters.

Variation.—Pleotelson and uropod spine counts ($n = 14$): telson: $6 + 5$ and $6 + 6$ each 43%, $5 + 5$ occurring only once; uropod exopod (medial margin/lateral margin): $4/7$ –71.5%, $4/8$ –28.5%; uropod endopod (medial margin/lateral margin): $4/5$ –78.6%, $4/4$ –21.3%. The larger specimens had the higher number of spines.

Color.—Pale brown with pink tinges in alcohol; chromatophores not apparent.

Size.—Males 11.2 to 13.4 mm, non-ovigerous females 12.2 to 17.0 mm.

Remarks.—Bruce (1986) provided a key to the species groups of *Natatolana* that occur in Australian waters. *Natatolana nukumbutho* does not key to any of those groups, but the cephalic, pleonal and pereopodal morphology is most similar to that of the *Natatolana valida*-group of species. It differs from species of that group, and therefore from all other species of *Natatolana*, in having the following combination of characters: all coxae with entire sutures, pleonite 3 acute but less strongly produced and not extending posterior to the posterior margin of pleonite 5, pleonite 4 less acute (but not rounded as in the *Natatolana woodjonesi*-group) and the appendix masculina distinctly shorter than the endopod. The spination of the pleotelson and uropods can be used to confirm the identity of the species.

Excluding those recorded from Australian waters, only three species of *Natatolana* are known from tropical Pacific and Japan: *Natatolana curta* (Richardson, 1910), *Natatolana japonensis* (Richardson, 1904) and *Natatolana miyamotoi* Nunomura, 1991. The first two species are easily distin-

guished, *N. curta* having a broadly rounded telson and uropodal endopod, while *N. japonensis* the posterior margin of the pleotelson acutely angled. The description and figures given for *Natatolana miyamotoi* are not of sufficient accuracy or detail to allow interpretation at species level, except that the appendix masculina clearly reaches the distal margin of the ramus. A fourth species, *Natatolana albicaudata* (Stebbing, 1900), is also known from Papua New Guinea, the Philippines and Japan as well as Australia (Bruce 1986, 1995b). That species is readily distinguished by having a broadly rounded pleotelson and the posterolateral margins of pleonite three not being acute and produced.

The position of the genital opening could not be discerned or located by tracing the vasa deferentia, the internal structure of the specimens appearing somewhat decomposed.

Distribution.—Known only from off Suva, Fiji, collected at a depth of 490 m.

Etymology.—The epithet is the name of the nearby Nukumbutho Island and reef pass, and is to be treated as a noun in apposition.

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